

### **Abstract of the Disclosure**

A fiber optic sensor includes two reflective elements in series. The first reflective element is formed as a partially mirrored surface on the end of a single-mode optical fiber lead which is bonded into a ferrule. A sleeve is used to join the ferrule to a second ferrule which is turn is bonded to a length of single-mode optical fiber. The second reflective element is a partially mirrored surface on the cleaved end of the second fiber. The second fiber may be affixed to or embedded in a structure to be monitored and changes its optical path length in response to a condition of the structure. Light introduced into the sensor is reflected from the first or second reflective element and thus follows two optical paths. The path length difference between the two optical paths is twice the optical path length of the second fiber.